

Serial No.: 09/800,187

Atty Docket No. HUV-037.01

Applicant(s): Grozinger et al.

Title: **CLASS II HUMAN HISTONE DEACETYLASES AND USES
RELATED THERETO**

The following was/were received in the USPTO mail room on the date stamped hereon:

1. Statement Under Section 111(c) Of The Patent Rules (1 page)
2. Sequence Listing Paper Copy (42 pages);
3. Electronic Copy of Sequence Listing (1 diskette);
4. Certificate of First Class Mailing (1 page) and
5. This Return Postcard

Atty: JAZarutskie

Mailing Date: October 30, 2003

Serial No.: 09/800,187

Atty Docket No. HUV-037.01

Applicant(s): Grozinger et al.

Title: **CLASS II HUMAN HISTONE DEACETYLASES AND USES
RELATED THERETO**

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1. Statement Under Section 111(c) Of The Patent Rules (1 page)
2. Sequence Listing Paper Copy (42 pages);
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5. This Return Postcard

Atty: JAZarutskie

Mailing Date: October 30, 2003



IN THE UNITED STATES PATENT OFFICE

Atty. Docket No.: HUV-037.01

In re patent application of

HARVARD UNIVERSITY

Inventors: GROZINGER, CHRISTINA
HASSIG, CHRISTIAN
SCHREIBER, STUART

Serial No.: US 09/800,197

Filed: March 5, 2001

For: CLASS II HUMAN HISTONE DEACETYLASES AND USES RELATED THERETO

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OF THE PATENT RULES

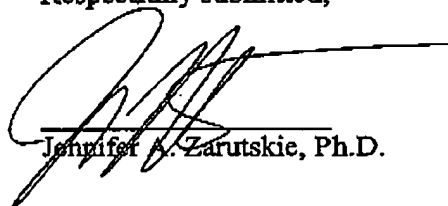
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Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

The undersigned hereby states that the Sequence Listing submitted concurrently herewith does not include matter which goes beyond the content of the application as filed and that the information recorded on the diskette submitted concurrently herewith is identical to the written Sequence Listing.

Respectfully submitted,

10/30/03
Date


Jennifer A. Zarutskie, Ph.D.

Foley Hoag LLP
155 Seaport Boulevard
Boston, MA 02210
(617) 832-1754

20/567279.1

SEQUENCE LISTING

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SCHREIBER, STUART L.

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Met Arg Thr Val Gly Lys Leu Pro Arg His Arg Pro Leu Ser Arg Thr
485 490 495

Gln Ser Ser Pro Leu Pro Gln Ser Pro Gln Ala Leu Gln Gln Leu Val
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Met Gln Gln Gln His Gln Gln Phe Leu Glu Lys Gln Lys Gln Gln Gln
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Leu Gln Leu Gly Lys Ile Leu Thr Lys Thr Gly Glu Leu Pro Arg Gln
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Pro Thr Thr His Pro Glu Glu Thr Glu Glu Glu Leu Thr Glu Gln Gln
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Glu Val Leu Leu Gly Glu Gly Ala Leu Thr Met Pro Arg Glu Gly Ser
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Glu Asp Gly Glu Glu Glu Glu Asp Cys Ile Gln Val Lys Asp Glu Glu
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Gly Glu Ser Gly Ala Glu Glu Gly Pro Asp Leu Glu Glu Pro Gly Ala
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Gly Tyr Lys Lys Leu Phe Ser Asp Ala Gln Pro Leu Gln Pro Leu Gln
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Val Tyr Gln Ala Pro Leu Ser Leu Ala Thr Val Pro His Gln Ala Leu
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Gly Arg Thr Gln Ser Ser Pro Ala Ala Pro Gly Gly Met Lys Ser Pro
660 665 670

Pro Asp Gln Pro Val Lys His Leu Phe Thr Thr Gly Val Val Tyr Asp
675 680 685

Thr Phe Met Leu Lys His Gln Cys Met Cys Gly Asn Thr His Val His
690 695 700

Pro Glu His Ala Gly Arg Ile Gln Ser Ile Trp Ser Arg Leu Gln Glu
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725 730 735

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740 745 750

Gly Thr Ser Pro Leu Asn Arg Gln Lys Leu Asp Ser Lys Lys Leu Leu
755 760 765

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770 775 780

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 Ala Gly Phe Asp Ala Val Glu Gly His Leu Ser Pro Leu Gly Gly Tyr
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 Ser Val Thr Ala Arg Cys Phe Gly His Leu Thr Arg Gln Leu Met Thr
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 His Trp Ser Cys Val Gln Lys Phe Ala Ala Gly Leu Gly Arg Ser Leu
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 Arg Glu Ala Gln Ala Gly Glu Thr Glu Glu Ala Glu Thr Val Ser Ala
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Ala Leu

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<212> DNA
<213> Homo sapiens

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<212> PRT

<213> Homo sapiens

<400> 6

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Arg Asn Ile Lys Lys Gly Ala Val Pro Arg Ser Ile Pro Asn Leu Ala
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Glu Val Lys Lys Lys Gly Lys Met Lys Lys Leu Gly Gln Ala Met Glu
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Glu Asp Leu Ile Val Gly Leu Gln Gly Met Asp Leu Asn Leu Glu Ala
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Glu Ala Leu Ala Gly Thr Gly Leu Val Leu Asp Glu Gln Leu Asn Glu
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Phe His Cys Leu Trp Asp Asp Ser Phe Pro Glu Gly Pro Glu Arg Leu
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His Ala Ile Lys Glu Gln Leu Ile Gln Glu Gly Leu Leu Asp Arg Cys
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Val Ser Phe Gln Ala Arg Phe Ala Glu Lys Glu Glu Leu Met Leu Val
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His Ser Leu Glu Tyr Ile Asp Leu Met Glu Thr Thr Gln Tyr Met Asn
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Arg Leu Val Asp Ala Val Leu Gly Ala Glu Ile Arg Asn Gly Met Ala
195 200 205

Ile Ile Arg Pro Pro Gly His His Ala Gln His Ser Leu Met Asp Gly
210 215 220

Tyr Cys Met Phe Asn His Val Ala Val Ala Ala Arg Tyr Ala Gln Gln
225 230 235 240

Lys His Arg Ile Arg Arg Val Leu Ile Val Asp Trp Asp Val His His
245 250 255

Gly Gln Gly Thr Gln Phe Thr Phe Asp Gln Asp Pro Ser Val Leu Tyr
260 265 270

Phe Ser Ile His Arg Tyr Glu Gln Gly Arg Phe Trp Pro His Leu Lys
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Ala Ser Asn Trp Ser Thr Thr Gly Phe Gly Gln Gly Gln Gly Tyr Thr
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Ile Asn Val Pro Trp Asn Gln Val Gly Met Arg Asp Ala Asp Tyr Ile
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Lys Gly Glu Met Ala Ala Thr Pro Ala Gly Phe Ala Gln Leu Thr His
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370 375 380

Gly Tyr Asn Leu Arg Ala Leu Ala Glu Gly Val Ser Ala Ser Leu His
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Thr Leu Leu Gly Asp Pro Cys Pro Met Leu Glu Ser Pro Gly Ala Pro
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Cys Arg Ser Ala Gln Ala Ser Val Ser Cys Ala Leu Glu Ala Leu Glu
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Pro Phe Trp Glu Val Leu Val Arg Ser Thr Glu Thr Val Glu Arg Asp
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Asn Met Glu Glu Asp Asn Val Glu Glu Ser Glu Glu Glu Gly Pro Trp
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Glu Pro Pro Val Leu Pro Ile Leu Thr Trp Pro Val Leu Gln Ser Arg
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Thr Gly Leu Val Tyr Asp Gln Asn Met Met Asn His Cys Asn Leu Trp
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Asp Ser His His Pro Glu Val Pro Gln Arg Ile Leu Arg Ile Met Cys
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Arg Leu Glu Glu Leu Gly Leu Ala Gly Arg Cys Leu Thr Leu Thr Pro
515 520 525

Arg Pro Ala Thr Glu Ala Glu Leu Leu Thr Cys His Ser Ala Glu Tyr
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Val Gly His Leu Arg Ala Thr Glu Lys Met Lys Thr Arg Glu Leu His
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Arg Glu Ser Ser Asn Phe Asp Ser Ile Tyr Ile Cys Pro Ser Thr Phe
565 570 575

Ala Cys Ala Gln Leu Ala Thr Gly Ala Ala Cys Arg Leu Val Glu Ala
580 585 590

Val Leu Ser Gly Glu Val Leu Asn Gly Ala Ala Val Val Arg Pro Pro
595 600 605

Gly His His Ala Glu Gln Asp Ala Ala Cys Gly Phe Cys Phe Phe Asn
610 615 620

Ser Val Ala Val Ala Ala Arg His Ala Gln Thr Ile Ser Gly His Ala
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Leu Arg Ile Leu Ile Val Asp Trp Asp Val His His Gly Asn Gly Thr
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Gln His Met Phe Glu Asp Asp Pro Ser Val Leu Tyr Val Ser Leu His
660 665 670

Arg Tyr Asp His Gly Thr Phe Phe Pro Met Gly Asp Glu Gly Ala Ser
675 680 685

Ser Gln Ile Gly Arg Ala Ala Gly Thr Gly Phe Thr Val Asn Val Ala
690 695 700

Trp Asn Gly Pro Arg Met Gly Asp Ala Asp Tyr Leu Ala Ala Trp His
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Arg Leu Val Leu Pro Ile Ala Tyr Glu Phe Asn Pro Glu Leu Val Leu
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Val Ser Ala Gly Phe Asp Ala Ala Arg Gly Asp Pro Leu Gly Gly Cys
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Leu Ala Ser Gly Arg Ile Ile Leu Ile Leu Glu Gly Gly Tyr Asn Leu
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Thr Ser Ile Ser Glu Ser Met Ala Ala Cys Thr Arg Ser Leu Leu Gly
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Asp Pro Pro Pro Leu Leu Thr Leu Pro Arg Pro Pro Leu Ser Gly Ala
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Ser Leu Arg Val Met Lys Val Glu Asp Arg Glu Gly Pro Ser Ser Ser
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Lys Leu Val Thr Lys Lys Ala Pro Gln Pro Ala Lys Pro Arg Leu Ala
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Asn Ser Glu Thr Ala Val Val Ala Leu Thr Gln Asp Gln Pro Ser Glu
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Ile Gly Gly Ala Met Leu Gly Gln Thr Thr Ser Glu Glu Ala Val Gly
930 935 940

Gly Ala Thr Pro Asp Gln Thr Thr Ser Glu Glu Thr Val Gly Gly Ala
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Ile Leu Asp Gln Thr Thr Ser Glu Asp Ala Val Gly Gly Ala Thr Leu
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Thr Ile Ser Glu Ala Ala Met Glu Gly Ala Thr Leu Asp Gln Thr Thr
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Tyr Ala Val Thr Pro Leu Pro Trp Cys Pro His Leu Val Ala Val Cys
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Pro Ile Pro Ala Ala Gly Leu Asp Val Thr Gln Pro Cys Gly Asp Cys
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Cys Gly Arg Tyr Ile Asn Gly His Met Leu Gln His His Gly Asn Ser
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Gly His Pro Leu Val Leu Ser Tyr Ile Asp Leu Ser Ala Trp Cys Tyr
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 Phe Leu Ala Gly Leu Gln Gln Gln Arg Ser Val Glu Pro Met Arg Leu
 35 40 45
 Ser Met Asp Thr Pro Met Pro Glu Leu Gln Val Gly Pro Gln Glu Gln
 50 55 60
 Glu Leu Arg Gln Leu Leu His Lys Asp Lys Ser Lys Arg Ser Ala Val

65	70					75					80
Ala Ser Ser Val Val Lys Gln Lys Leu Ala Glu Val Ile Leu Lys Lys	85					90					95
Gln Gln Ala Ala Leu Glu Arg Thr Val His Pro Asn Ser Pro Gly Ile	100					105					110
Pro Tyr Arg Thr Leu Glu Pro Leu Glu Thr Glu Gly Ala Thr Arg Ser	115					120					125
Met Leu Ser Ser Phe Leu Pro Pro Val Pro Ser Leu Pro Ser Asp Pro	130					135					140
Pro Glu His Phe Pro Leu Arg Lys Thr Val Ser Glu Pro Asn Leu Lys	145					150					155
Leu Arg Tyr Lys Pro Lys Lys Ser Leu Glu Arg Arg Lys Asn Pro Leu	165					170					175
Leu Arg Lys Glu Ser Ala Pro Pro Ser Leu Arg Arg Arg Pro Ala Glu	180					185					190
Thr Leu Gly Asp Ser Ser Pro Ser Ser Ser Ser Thr Pro Ala Ser Gly	195					200					205
Cys Ser Ser Pro Asn Asp Ser Glu His Gly Pro Asn Pro Ile Leu Gly	210					215					220
Asp Ser Asp Arg Arg Thr His Pro Thr Leu Gly Pro Arg Gly Pro Ile	225					230					235
Leu Gly Ser Pro His Thr Pro Leu Phe Leu Pro His Gly Leu Glu Pro	245					250					255
Glu Ala Gly Gly Thr Leu Pro Ser Arg Leu Gln Pro Ile Leu Leu Leu	260					265					270
Asp Pro Ser Gly Ser His Ala Pro Leu Leu Thr Val Pro Gly Leu Gly	275					280					285
Pro Leu Pro Phe His Phe Ala Gln Ser Leu Met Thr Thr Glu Arg Leu	290					295					300
Ser Gly Ser Gly Leu His Trp Pro Leu Ser Arg Thr Arg Ser Glu Pro	305					310					315
Leu Pro Pro Ser Ala Thr Ala Pro Pro Pro Gly Pro Met Gln Pro	325					330					335
Arg Leu Glu Gln Leu Lys Thr His Val Gln Val Ile Lys Arg Ser Ala	340					345					350
Lys Pro Ser Glu Lys Pro Arg Leu Arg Gln Ile Pro Ser Ala Glu Asp	355					360					365
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370 375 380
 Glu His Arg Glu Leu Gly His Gly Gln Pro Glu Ala Arg Gly Pro Ala
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Leu His Arg His Asp Asp Gly Asn Phe Phe Pro Gly Ser Gly Ala Val
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740 745 750

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Pro Leu Gly Gly Tyr His Val Ser Ala Lys Cys Phe Gly Tyr Met Thr
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Lys Gln Lys Pro Asn Leu Asn Ala Ile Arg Ser Leu Glu Ala Val Ile
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Arg Val His Ser Lys Tyr Trp Gly Cys Met Gln Arg Leu Ala Ser Cys
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Pro Asp Ser Trp Val Pro Arg Val Pro Gly Ala Asp Lys Glu Glu Val
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<213> Homo sapiens

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Met Met Pro Val Val Asp Pro Val Val Arg Glu Lys Gln Leu Gln Gln
      35              40              45

Glu Leu Leu Leu Ile Gln Gln Gln Gln Gln Ile Gln Lys Gln Leu Leu
      50              55              60

Ile Ala Glu Phe Gln Lys Gln His Glu Asn Leu Thr Arg Gln His Gln
      65              70              75              80

Ala Gln Leu Gln Glu His Ile Lys Glu Leu Leu Ala Ile Lys Gln Gln
      85              90              95

Gln Glu Leu Leu Glu Lys Glu Gln Lys Leu Glu Gln Gln Arg Gln Glu
      100              105              110

Gln Glu Val Glu Arg His Arg Arg Glu Gln Gln Leu Pro Pro Leu Arg
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Gly Lys Asp Arg Gly Arg Glu Arg Ala Val Ala Ser Thr Glu Val Lys
      130              135              140

Gln Lys Leu Gln Glu Phe Leu Leu Ser Lys Ser Ala Thr Lys Asp Thr
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Pro Thr Asn Gly Lys Asn His Ser Val Ser Arg His Pro Lys Leu Trp
      165              170              175

Tyr Thr Ala Ala His His Thr Ser Leu Asp Gln Ser Ser Pro Pro Leu
      180              185              190

Ser Gly Thr Ser Pro Ser Tyr Lys Tyr Thr Leu Pro Gly Ala Gln Asp
      195              200              205

Ala Lys Asp Asp Phe Pro Leu Arg Lys Thr Ala Ser Glu Pro Asn Leu
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Pro Leu Leu Arg Arg Lys Asp Gly Asn Val Val Thr Ser Phe Lys Lys
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Arg Met Phe Glu Val Thr Glu Ser Ser Val Ser Ser Ser Ser Pro Gly
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Ser Gly Pro Ser Ser Pro Asn Asn Gly Pro Thr Gly Ser Val Thr Glu
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Asn Glu Thr Ser Val Leu Pro Pro Thr Pro His Ala Glu Gln Met Val
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Ser Gln Gln Arg Ile Leu Ile His Glu Asp Ser Met Asn Leu Leu Ser
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Leu Tyr Thr Ser Pro Ser Leu Pro Asn Ile Thr Leu Gly Leu Pro Ala
325 330 335

Val Pro Ser Gln Leu Asn Ala Ser Asn Ser Leu Lys Glu Lys Gln Lys
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Cys Glu Thr Gln Thr Leu Arg Gln Gly Val Pro Leu Pro Gly Gln Tyr
355 360 365

Gly Gly Ser Ile Pro Ala Ser Ser Ser His Pro His Val Thr Leu Glu
370 375 380

Gly Lys Pro Pro Asn Ser Ser His Gln Ala Leu Leu Gln His Leu Leu
385 390 395 400

Leu Lys Glu Gln Met Arg Gln Gln Lys Leu Leu Val Ala Gly Gly Val
405 410 415

Pro Leu His Pro Gln Ser Pro Leu Ala Thr Lys Glu Arg Ile Ser Pro
420 425 430

Gly Ile Arg Gly Thr His Lys Leu Pro Arg His Arg Pro Leu Asn Arg
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Thr Gln Ser Ala Pro Leu Pro Gln Ser Thr Leu Ala Gln Leu Val Ile
450 455 460

Gln Gln Gln His Gln Gln Phe Leu Glu Lys Gln Lys Gln Tyr Gln Gln
465 470 475 480

Gln Ile His Met Asn Lys Leu Leu Ser Lys Ser Ile Glu Gln Leu Lys
485 490 495

Gln Pro Gly Ser His Leu Glu Glu Ala Glu Glu Glu Leu Gln Gly Asp
500 505 510

Gln Ala Met Gln Glu Asp Arg Ala Pro Ser Ser Gly Asn Ser Thr Arg
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Ser Asp Ser Ser Ala Cys Val Asp Asp Thr Leu Gly Gln Val Gly Ala
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Val Lys Val Lys Glu Glu Pro Val Asp Ser Asp Glu Asp Ala Gln Ile
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<213> Homo sapiens

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Tyr Ile Asp Ile Asp Ile His His Gly Asp Gly Val Glu Glu Ala Phe
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Tyr Thr Thr Asp Arg Val Met Thr Val Ser Phe His Lys Tyr Gly Glu
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Tyr Phe Pro Gly Thr
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<213> Saccharomyces sp.

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20 25 30

Arg Arg Ile Met Ile Leu Asp Trp Asp Ile His His Gly Asn Gly Thr
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Gln Lys Ser Phe Tyr Gln Asp Asp Gln Val Leu Tyr Val Ser Leu His
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Arg Phe Glu Met Gly Lys Tyr Tyr Pro Gly Thr
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Ser Val Ala Val Ala Ala Arg His Ala Gln Thr Ile Ser Gly His Ala
20 25 30

Leu Arg Ile Leu Ile Val Asp Trp Asp Val His His Gly Asn Gly Thr
35 40 45

Gln His Met Phe Glu Asp Asp Pro Ser Val Leu Tyr Val Ser Leu His
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Arg Tyr Asp His Gly Thr Phe Phe Pro Met Gly
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Val Xaa Thr Ser Xaa His

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<223> Tyr or His

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Xaa Glu Gly Gly Xaa
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